

In the Claims:

The following list of claims will replace all prior versions and listings of claims in the case.

Listing of Claims:

1 – 27 (Cancelled).

28. (currently amended): A process for forming a semiconductor device comprising a plurality of MOS transistors at predetermined regions of a silicon substrate, comprising:

implanting, in a predetermined regions of the silicon substrate, a chemical species, with an implantation energy between 2 and 15 keV, ~~into the predetermined regions of the silicon substrate, wherein the chemical species comprises Ar, Ne or He,~~ ~~and wherein the predetermined regions of the silicon substrate are exposed directly to the implantation source;~~

oxidizing the surface of the silicon substrate to form a gate oxide layer of non-uniform thickness; and

forming MOS transistors at the predetermined regions of the silicon substrate, wherein the oxidized layer at the predetermined regions forms the gate oxide layer of the MOS transistors.

29. (previously presented): The process of claim 28, wherein implanting in the predetermined regions is an ion implantation step.

30. (previously presented): The process of claim 28, wherein the implanted dose is from 5×10^{13} to 5×10^{15} atoms/cm².

31. (previously presented): The process of claim 28, wherein oxidizing the surface of the silicon substrate comprises oxidation in a furnace, plasma oxidation, electrochemical oxidation or rapid thermal oxidation.

32. (currently amended): The process of claim 28, wherein oxidizing the surface of the silicon substrate comprises an oxidation step in a furnace at a temperature of at least 300°C and in an oxidizing atmosphere.

33 – 55 (Cancelled)